colour could be changed by varying the excitation wavelength also. The emission spectrum for the sample has been converted to the CIE 1931 color coordinate system. The color coordinates corresponding to the prominent emissions are determined. The CIE chromaticity calculation demonstrated its potential as white LED-based near-UV excitation.

The research work presented in the thesis has either been published in or communicated to reputed international journals and presented in various national/international seminars.

Research papers published/ communicated

1. **Prathibha Vasudevan**, Sunil Thomas, Biju P R, Sudarsanakumar C, Unnikrishnan N V, Synthesis and structural characterizations of sol gel derived titania/ poly(vinyl pyrrolidone) hybrids, *J Sol-Gel Sci Technol.* **62** (2012) 41.
2. **Prathibha Vasudevan**, Sunil Thomas, Karthika S, Biju P R, Cyriac Joseph, Unnikrishnan N V, Fluorescence enhancement in Sm^{3+}/TiO_2 nanocrystallites doped PVP matrix, *J Opt.* **40** (2011) 96.
3. **Vasudevan Prathibha**, S Karthika, Joseph Cyriac, C Sudarasanakumar, N V Unnikrishnan, Synthesis of pure anatase TiO_2 nanocrystals in SiO_2 host and the determination of crystal planes by ImageJ , *Mater. Letts.* **65** (2011) 664.
4. **Prathibha Vasudevan,** Arun Kumar K V, Sunil Thomas, Biju P R, Unnikrishnan N V, RGB Emission From RE Ions Doped Titania /PVP Hybrid Matrix. *AIP Conf. Proc.* 1391(2011) 661.
5. RejiKumar P R, **Prathibha Vasudevan**, Karthika S, George J, N V Unnikrishnan, Structural and Spectroscopic Characterization of Ho^{3+} in Sol-Gel Silica, *Journal of optoelectronics and advanced materials* **12** (2010) 1065 .

6. **Prathibha Vasudevan**, Sunil Thomas, Arun Kumar K V, Cyriac Joseph Unnikrishnan N V, Sol- gel synthesis and characterization of $PVP/TiO_2:Sm^{3+}$ hybrid composites, *Physica E: Low Dimensional Systems and Nanostructures* (Communicated 2012).
7. **Prathibha Vasudevan**, Arun Kumar K V, Sunil Thomas, N V Unnikrishnan, Dielectric and low frequency ac conductivity studies of Titania/ polyvinyl (pyrrolidone) nanocomposites, *Solid state Ionics* (communicated 2012).
8. **Prathibha Vasudevan,** Sunil Thomas, N V Unnikrishnan, Enhanced luminescence properties of Eu^{3+}/TiO_2 nanocrystals in PVP matrix, *Journal of Luminescence* (communicated 2012).
9. **Prathibha Vasudevan,** Sunil Thomas, Unnikrishnan N V, Energy transfer mechanism from Tb^{3+} to Eu^{3+} and their colorimetric analysis, *Journal of rare earths* (communicated 2012).
10. Xavier Joseph, T Mathew, C K Aanandan, **Prathibha Vasudevan,** N V Unnikrishnan, Dielectric properties of dye doped poly(methyl methacrylate) at s-band using cavity perturbation technique, *Microwave and Optical Technology Letters* (Under Revision)
11. K R Bindu , Arturo I Martinez, **Prathibha Vasudevan**, Unnikrishnan N V, E I Anila, Physical properties of nanostructured ZnS powder with strong confinement Effects, *Physica E: Low Dimensional Systems and Nanostructures* (Under Revision).
12. Arun Kumar K V, Revathy K P, **Prathibha vasudevan**, Sunil Thomas, Biju P R, N V Unnikrishnan, Luminescence enhancement properties of europium/silver doped SiO_2-TiO_2 matrices, *Materials Science and Engineering B (*communicated 2012*).*

Research Papers Presented in National /International Seminars

1. Rejikumar P R, **Prathibha Vasudevan**, Karthika S, N V Unnikrishnan., Effect of Triangular and spherical silver nanoparticles on the dielectric properties of Holmiun doped silica glass*, National seminar on Recent advances in nano science & Technology* **[NS NANO- 2009]**, S.N College, Kollam, **Oct 2009.**

2. Siby Mathew, Karthika S, **Prathibha Vasudevan**, K T Mathew, N V Unnikrishnan, Dielectric studies of ZnSe / Eu^{3+} ions in Sol Gel glasses, *National workshop on Quantum confined systems and nanoscale devices*, St. Thomas College, Palai, **Dec 2009**.

3. Xavier Joseph, Arun Kumar K V, **Prathibha Vasudevan**, Gijo Jose, N V Unnikrishnan ., Optical and Z-Scan studies of CdS/Tb^{3+}/Eu^{3+} doped silica matrix, *National Laser Symposium* **[NLS-9]** , Baba Atomic research Center (BARC), Mumbai, **Jan 2010**.

4. **Prathibha Vasudevan**, Sunil Thomas, Siby Mathew, N V Unnikrishnan., Synthesis and characterizations of anatase TiO_2 nanocrystals by simple polymer gel technique*. International Conference on Composites and Nanocomposites* **[ICCN- 2011],** Kottayam, India, **Jan 2011**.

5. **Prathibha Vasudevan**, Sunil Thomas, Karthika S, Biju P R, Cyriac Joseph, Unnikrishnan N V, Fluoresecence enhancement in Sm^{3+}/TiO_2 nanocrystallites doped PVP matrix, *XXXV Optical Society of India Symposium, International Conference on Contemporary trends in optics and Optoelectronics,* IIST, Trivandrum, **Jan 2011.**

6. **Prathibha Vasudevan**, Sunil Thomas, Siby Mathew, N V Unnikrishnan., *National Seminar on Recent trends in nonlinear optical materials and characterization,* Sacred Heart College, Chalakudy, Kerala, **March 2011.**

7. **Prathibha Vasudevan,** Arun Kumar K V, Sunil Thomas, Biju P R, Unnikrishnan N V, RGB Emission From RE Ions Doped Titania /PVP Hybrid

Matrix, *International conference on light: OPTICS'11:* NIT Calicut, Kerala, India, **May 2011.**

8. **Prathibha Vasudevan,** Karthika S, Sunil Thomas, Biju P R, N V Unnikrishnan., White light emission from Tb^{3+}, Eu^{3+}/PVA film under Single UV Excitation, *National Workshop on "Mesmerisms in Opto- electronics",* Baselius college, Kottayam, **July 2011.**
9. **Prathibha Vasudevan,** Arun Kumar K V, Karthika S ,Sunil Thomas, N V Unnikrishnan., Nanocrystallization of TiO_2 in PVP matrix and its structural characterizations **,** *Third International Conference on Frontiers in Nanoscience and Technology,* **Cochin Nano-2011, August 2011.**
10. **Prathibha Vasudevan,** Sunil Thomas, Arunkumar K V, Karthika S, Unnikrishnan N V, Synthesis and dielectric studies of Poly (vinyl pyrrolidone)/ Titanium dioxide nanocomposites, *International conference on Materials Science and Technology,* **ICMST 2012**, Kottayam, **June 2012.**